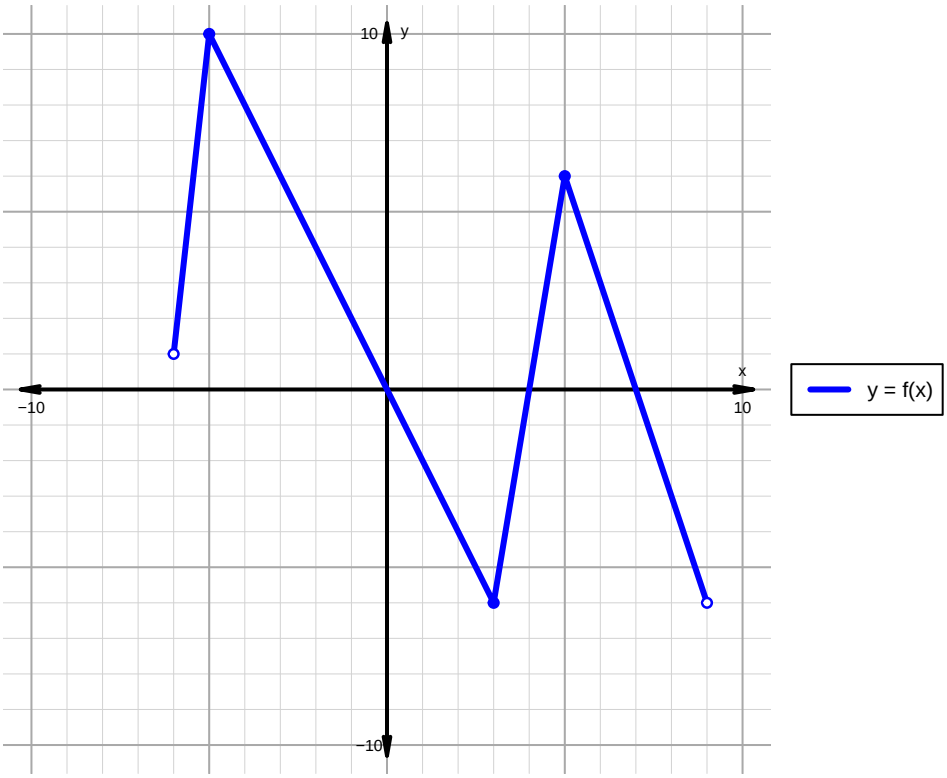
Name: Date:

Intervals, Transformations, and Slope Solution (version 8)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6, 0) \cup (4, 7)$
Negative	$(0, 4) \cup (7, 9)$
Increasing	$(-6, -5) \cup (3, 5)$
Decreasing	$(-5, 3) \cup (5, 9)$
Domain	$(-6, 9)$
Range	$(-6, 10)$

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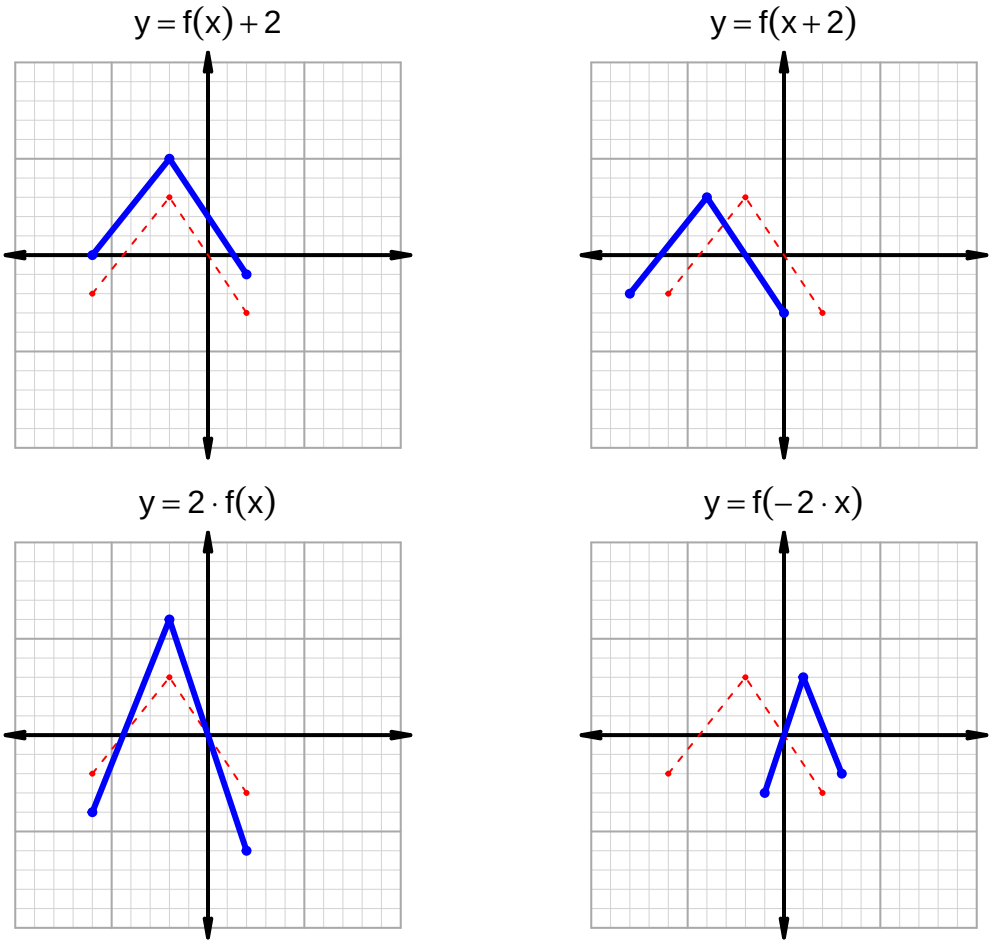
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 47$ and $x_2 = 87$. Express your answer as a reduced fraction.

x	$g(x)$
47	73
73	87
78	47
87	78

$\frac{f(87)-f(47)}{87-47} = \frac{78-73}{87-47} = \frac{5}{40}$

The greatest common factor of 5 and 40 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{1}{8}$$